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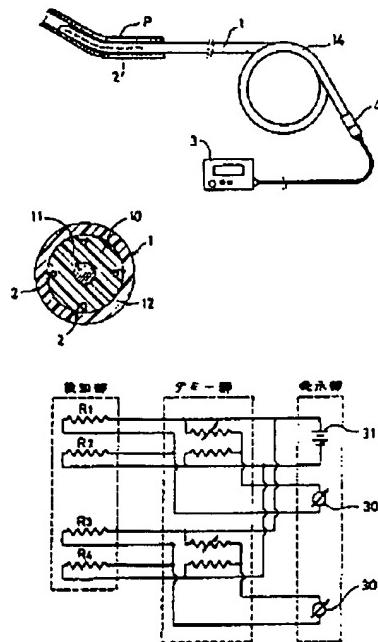
APPLICATION DATE : 30-03-87
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TITLE : BEND DETECTING SENSOR



ABSTRACT : PURPOSE: To easily detect the angle and direction of the curve of a detection shaft which is flexible and tough by providing expansion-contraction detecting elements to the outer periphery of the detection shaft at least three positions in parallel to the axial direction, and comparing their detected expansion-contraction states.

CONSTITUTION: The detection shaft 1 is a long-sized body which can be inserted into piping P, etc., and consists of an FRP shaft body 10, a piano wire 11, and a protection resin layer 12, and an element 2 for expansion-contraction detection such as an electric resistance strain gauge is embedded nearby the tip. Resistances R1-R4 of the strain gauge are connected to a display part 3 by lead wires to constitute a bridge circuit, and variation in resistance due to expansion or contraction is displayed on the μA meter 30 of the display part 3. Consequently, the expansion-contraction difference of the surface which is opposite in a diameter direction is detected to calculate the bending angle of a rod material in the diameter direction and when there are elements 2 at four positions, the element contracted most is only detected to determine the bending direction roughly. Then display values in both X- and Y-axial directions are vector-processed to know the absolute value of the bending angle and the direction of the bend.

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